

(19) World Intellectual Property  
Organization  
International Bureau



553381

(43) International Publication Date  
21 October 2004 (21.10.2004)

PCT

(10) International Publication Number  
**WO 2004/090563 A1**

(51) International Patent Classification<sup>7</sup>: **G01R 33/46**

(21) International Application Number:  
PCT/EP2004/003864

(22) International Filing Date: 13 April 2004 (13.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0308586.7 14 April 2003 (14.04.2003) GB

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MULTIDIMENSIONAL NMR SPECTROSCOPY OF A HYPERPOLARIZED SAMPLE

(57) Abstract: The present invention relates to methods of performing Nuclear Magnetic Resonance (NMR) spectroscopy adapted for a hyperpolarized sample. The methods comprise the steps of hyperpolarizing a sample using DNP, wherein at least a portion of the NMR active nuclei receives hyperpolarization; performing NMR spectroscopy on the sample with the use of sequences of rf-pulses, wherein the pulse sequences comprises at least two rf-pulses, either on the same nuclei or on different nuclei, and wherein the pulse sequence is adapted for a hyperpolarized sample; and analysing at least two of the NMR spectra to obtain a characterization of the sample, or to obtain an interim result to be used in the NMR spectroscopy step.

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